

Work Order ID 131184

Monday, March 30, 2015 9:10:56 AM

131184

Page 1

Item ID: D350-748-203 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: SS Aft Crosstube AS350 / AS355
 Start Date: 3/30/2015 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 3/30/2015 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: MLS Date: 1503-30 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D350-748-243	A								
100	Document Control	0.00	DAS						DAS
100	DOCUMENT CONTROL		6						02
DC	Memo	0.00	9-89						9-89
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPPD350-748-201		CHG001						
110	BENDING MACHINE - CROSSTUBES	0.00							
110									
CNC Bend 2	Memo	0.00							
CNC Alpha 160 Bender	Bend tube as per Dwg D350-748-243 using CNC bender program D350A and Folio FT								
	*****UNDER BEND .225" PER SIDE*****								
	****USE (4) DT9824 SHIM BLOC TO CHECK STRAIGHTNESS****								

MLS 15-09-21

SEP 30 2015

15-08-10

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Item ID: D350-748-203

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: SS Aft Crosstube AS350 / AS355

Stop

NS2

Start Date: 3/30/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/30/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

120

Crosstubes

Crosstubes

Memo

****VERIFY CROSSTUBE DIMENSIONS AS PER DWG****

127

127

QC

Quality Control

QC15- Crosstube Dimensional Check

0.00

Memo

MARK CUT LINES

0.00

128

128

Crosstubes

Crosstubes

Memo

CUT TUBE AT HEIGHT ON FAI SHEET

0.00

0.00

VERF HEIGHT 31.35 BY QC 15 LEVEL INSPECTOR EB

VERF TWIST 0.25 BY QC15 LEVEL INSPECTOR EB

DAS
38
9-89
AUG 10 2015

DAS
49
9-89

BL

15/08/11

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130	Crosstubes	0.00							
-----	------------	------	--	--	--	--	--	--	--

130

Crosstubes	Memo	0.00							
------------	------	------	--	--	--	--	--	--	--

Crosstubes

2- Drill Tube as per Dwg D350-748-243 Using DT8876 Drill Jigs,
Set-up drill table as per QSI 010

3 -Deburr

4- Engrave Part # and Batch # as per Dwg D350-748-243

5-Remove all marks from tube within limits of D350-748-243

TW 15-08-20

140	QC- Inspect dimensions to drawing	0.00							
-----	-----------------------------------	------	--	--	--	--	--	--	--

140

QC	Memo	0.00							
----	------	------	--	--	--	--	--	--	--

Quality Control

QC5
DAS
9-89

1 0

DAS
49
9-89
15/08/21

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Item ID: D350-748-203

Accept

N900040100Setup Start ***NS1***

Revision ID:

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Start Date: 3/30/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 3/30/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

174

Outsource process - NDT per QSI038 4.1

0.00

174

Outsource2

Memo

0.00

Outsource process - NDT

ISSUE P/O TO ACCUREN: 29562CX AUG 24 2015 1

176

Receive & Inspect for Damage & Mat'l Certs

0.00

176

Packaging

Memo

0.00

Packaging

DAS
38
9-89
1 AUG 26 2015

178

QC5- Inspect part completeness to step on W/O

0.00

178

QC

Memo

0.00

Quality Control

1 DAS
38
9-89
AUG 27 2015

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	SprayPaint	0.00				1			DAS 41 9-89
180									15-8-27
SprayPaint		Memo							
Spray Painting		1-Prime inside and out crosstube as per QSI 005 4.2 BATCH: <u>132384</u>							
		2-Paint Outside of Tube as per Dart QSI 005 4.2 BATCH: <u>132664</u>							
190	QC14- Inspect Spray Paint	0.00							DAS 38 9-89
190									SEP 21 2015
QC		Memo							
Quality Control		Then, Wrap in plastic bag to protect from scratches							

POSITIVE RECALL

EFFECTIVE 5/03/30 AUTH u

RELEASED u DATE 15/6/17

Wait for paint scheme

SEE
Attached

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131184

Page 6

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: SS Aft Crosstube AS350 / AS355

Stop *NS2*

Start Date: 3/30/2015 **Start Qty:** 1.00

*** 1 ***

Cust Item ID:

Required Date: 3/30/2015 **Req'd Qty:** 1.00

*** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

0.00

200

Crosstubes

0.00

Crosstubes

Crosstubes

Memo

INSTALL GROUND WIRE INSERT, THEN INSERT SCREW AND WASHER

1-Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg

2-Install supports with Proseal 890 per D350-748-243 and OSI 015

A/R Proseal 890 Batch: 132655

EXP: 3/16

3-Install supports clamps Using Dt8876 as per Dwg D350-748-243,Torque to 60-80 IN-LBS.

PROSEAL CURE TIME 72 HOURS:

Start: 15-98-14

Finish: 15-9-17

1 _____ AS
15-9-11

210

QC5- Inspect part completeness to step on W/O	0.00
---	------

210

QC

Quality Control

Memo

0.00

***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED
FOR 72HOURS AS PER DWG.***

DAS
38
9-89

~~SEP 21 2015~~

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131 184

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N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 3/30/2015 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 3/30/2015 **Req'd Qty:** 1.00 ***1***

Customer:

Reference:

Run Start *NR1*

Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

Pick Kit

0.00

220

Packaging

Memo

0.00

Packaging

AS
27
8-89

SEP 30 2015

230

QC4- 100% Inspect kits for completeness

0.00

230

QC

Memo

0.00

Quality Control

**DAS
02
9-89**

SEP 30 2015

240

Packaging

0.00

240

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD350-748-203

Location: 035

PPP Rev:

DAS
02

9-89

SEP 30 2045

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Item ID: D350-748-203

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Item Name: SS Aft Crosstube AS350 / AS355

Start Date: 3/30/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 3/30/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	QC21- Final Inspection - Work Order Release	0.00							
250									
QC	Memo	0.00							
Quality Control									

MCS OCT 01 2015

Picklist Print

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Work Order ID: 131184

131184

Parent Item: D350-748-203

D350-748-203

Parent Item Name: SS Aft Crosstube AS350 / AS355

Start Date: 3/30/2015

Required Date: 3/30/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 15.03.23 NEW ISSUE DD VERF;JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MS51958-63 *MS51958-63* Screw		Purchased	No				Each	50.0000		1		DAS 41 9-89	15-8-31

Location	Loc Qty	Loc Code
ST273	50	
m131886	50	

AN4-41A

Purchased

No

220

Each

229.0000

8

8

Location	Loc Qty	Loc Code
ST312A	209	
124836	9	
m130716	192	
m130726	8	
ST340	5	
m124804	5	
ST341	15	
124805	15	

AN4-41A

Bolt

DAS
02
9-89

DAS
27
9-89

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Work Order ID: 131184

131184

Parent Item: D350-748-203

D350-748-203

Parent Item Name: SS Aft Crosstube AS350 / AS355

Start Date: 3/30/2015

Required Date: 3/30/2015

Start Qty: 1.00

Required Qty: 1.00

AN4-6A

Purchased

No

220

Each

1,942.000

16

16

27
9-89

AN4-6A

BOLT

DAS
02
9-89

**

Location

Loc Qty

Loc Code

CA

143

M128403

43

M130851

100

ST325A

1599

M131153

1599

ST345

200

M128403

8

M128634

192

16

AN5-32A

Purchased

No

220

Each

139.0000

4

4

AN5-32A

Bolt

DAS
02
9-89

**

Location

Loc Qty

Loc Code

ST299A

123

m130716

23

m131139

100

ST336

16

m128403

7

m128634

9

M132536

DAS
27
9-89

D3500-1

Manufactured

No

220

Each

16.0000

4

4

D3500-1

Saddle

DAS
02
9-89

**

Location

Loc Qty

Loc Code

ST406

16

125922

5

129372

11

B129373

4

DAS
27
9-89

SEP 30 2015

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Shop Packet Print

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Picklist Print

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Work Order ID: 131184

131184

Parent Item: D350-748-203

D350-748-203

Parent Item Name: SS Aft Crosstube AS350 / AS355

Start Date: 3/30/2015

Required Date: 3/30/2015

Start Qty: 1.00

Required Qty: 1.00

D3501-1 Manufactured No

220 Each 8.0000 16 16

D3501-1 **DAS**
Bushing **02**
9-89

DAS
27
9-89

DAS
6
9-89

Location	Loc Qty	Loc Code
ST046	8	
125925	1	
130742	7	

B13S919

16

MS21042L4 Purchased No

220 Each 2,634.000 24 24

MS21042L4
Locknut

132382

DAS
27
9-89

DAS
6
9-89

Location	Loc Qty	Loc Code
FP001	42	
m124231	42	
GA	634	
m127813	634	
ST260a	1056	
m130799	56	
m131803	1000	
ST305	902	
426	426	
m128300	8	
m128798	10	
m130922	97	
m131340	349	
m131618	12	

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Work Order ID: 131184

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Parent Item: D350-748-203

D350-748-203

Parent Item Name: SS Aft Crosstube AS350 / AS355

Start Date: 3/30/2015

Required Date: 3/30/2015

Start Qty: 1.00

Required Qty: 1.00

MS21042L5

Purchased

No

220

Each

465.0000

4

4

MS21042L5

M132677

Nut

**DAS
02
9-89**

Location

Loc Qty

Loc Code

GA

150

m127813

150

ST305

315

m127813

290

m130388

4

m131340

21

**DAS
27
9-89**

NAS1149D0463J

Purchased

No

220

Each

2,231.000

32

32

NAS1149D0463J

M132035

WASHER

**DAS
02
9-89**

Location

Loc Qty

Loc Code

CA

397

M129682

397

GA

136

M129390

136

ST269

1698

M130799

507

M131624

1191

**DAS
27
9-89**

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Work Order ID: 131184

Parent Item: D350-748-203

Parent Item Name: SS Aft Crosstube AS350 / AS355

131184

D350-748-203

Start Date: 3/30/2015

Required Date: 3/30/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0563J

Purchased

No

220

Each

799.0000

8

8

NAS1149D0563J

Washer

DAS
02
9-89

**

Location

Loc Qty

Loc Code

GA

130

m125807

130

ST260a

68

113524

3

118206

2

m130799

63

ST269

156

m128257

156

ST271

445

m131026

445

D350-748-243TRN

Manufactured

No

D350-748-243TRN

Crosstube Installation, High Aft

D3502-1

Manufactured

No

D3502-1

Support

Each

0.0000

**

①

BL 15/08/10

Each

28.0000

**

2

AB 15-9-15

2

Location

Loc Qty

Loc Code

LG050

28

119578

2

125926

-2

129420

28

D5123-7

Manufactured

No

D5123-7

Clamp Cushion

Each

0.0000

**

2

AB 15-9-15

2

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Shop Packet Print

Page 5

Picklist Print

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D350-748-203

Parent Item Name: SS Aft Crosstube AS350 / AS355

Start Date: 3/30/2015

Required Date: 3/30/2015

Start Qty: 1.00

Required Qty: 1.00

AETC-1032

Purchased

No

Each

20.0000

1

DAS

AETC-1032

Insert

41

9-89

15-8-31

Location

Loc Qty

Loc Code

st549

20

m131156

20

2 ->

1 scrap

NAS1149C0363R

Purchased

No

Each

682.0000

1

DAS

NAS1149C0363R

Washer

41

9-89

15-8-31

Location

Loc Qty

Loc Code

132763

FP001

120

114742

120

GA

180

m130673

180

ST271

382

m130673

382

MS21920-20

Purchased

No

Each

157.0000

2

MS21920-20

Clamp

AB 15-9-15

Location

Loc Qty

Loc Code

FG

2

122254

2

LG050

155

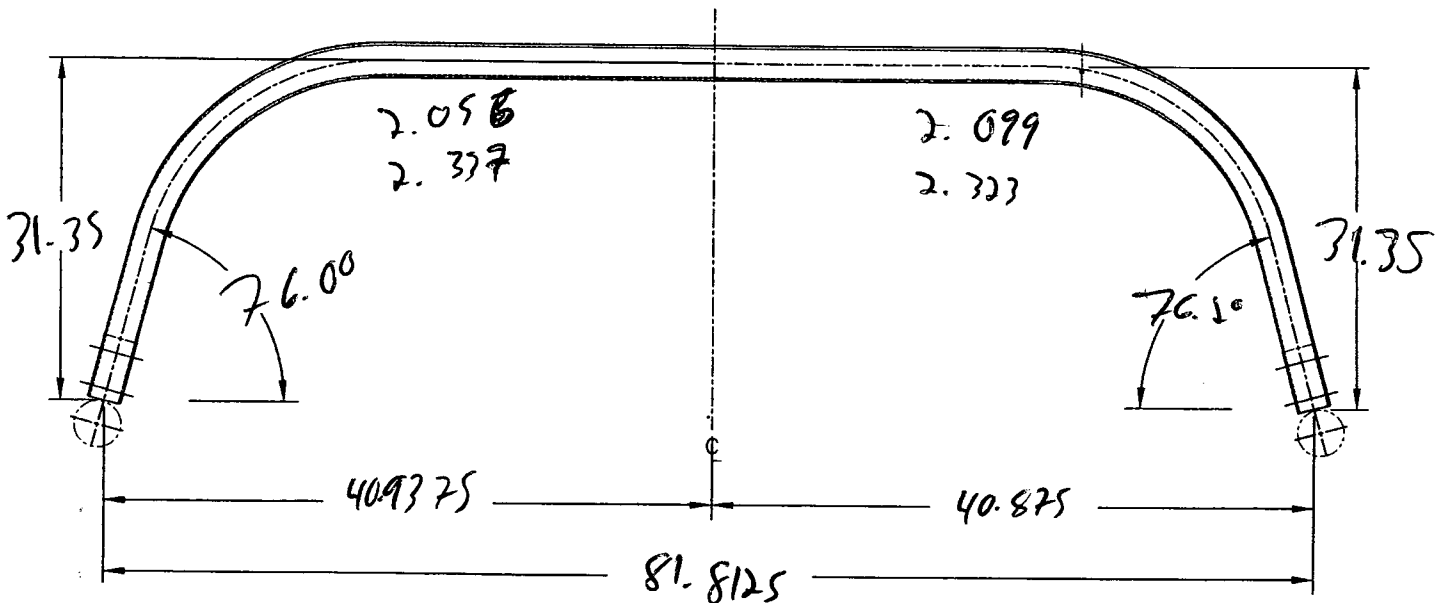
m128650

155

2

DART AEROSPACE LTD		Work Order: 131184
Description:		Part Number: D350-748 213
Inspection Dwg: D350-748-243 Rev: A		Page 1 of 1

Required Dimension	Min	Max
Height	31.10	31.600
1/2 Span	40.77	41.07
Angle	75°	77°
Total Span	81.54	82.06
Bending Passes	7	
Crushing		89%



	Side A	Side B
Bending Passes	28	30
Crushing	6.4%	5.1%
Comments		

	DAS	DAS
QC15 Inspection	38	49
Date	9-89	9-89

Rev	Date	Change	Revised by	Approved
A		New Issue		
B	06.09.19	Reformat; QC level revised	KJ/JM	
C	07.02.06	Reformat	KJ/JM	
D	12.02.15	Added bending passes and crushing	KJ	
E	12.03.07	Revised comments table	KJ	

Item	Qty -243	Part Number	Description
1	X	D350-748-243	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
2	1	D6021-125	CROSSTUBE
3	2	D3502-1	SUPPORT
4	2	D5123-7	CLAMP CUSHION
5	1	AETC-1032	INSERT
6	2	MS21920-20 OR MS21920-21/-22	CLAMP (PER DART SPEC. M-MS21920-20/-21/-22)
7	1	NAS1149C0363R	WASHER (OR AN960C10)
8	1	NAS1635-3-8	SCREW (OR MS51958-63)
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6021-125
FINISHED LENGTH AFTER TURNING = 124.70±0.06 (AFTER BENDING/TRIMMING = 122.70 REF)
- 2) FINISH: PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCE: PER DART QSI 018 UNLESS OTHERWISE NOTED.
WALL THICKNESS ECCENTRICITY PER DART QSI 038 7.2
MIN. ALLOWABLE WALL IS -0.020 FROM NOMINAL
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-243" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 29.85 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.290 HOLE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.

TURNING

- 10) BEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.

BENDING

- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES PER SIDE. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 8% BASED ON O.D. ON TOP HALF OF BEND, AND 8% ON BOTTOM HALF OF BEND.
- 12) MAX AMPLITUDE OF RIBBLING ALONG BENT PORTION OF THE TUBE IS 0.030 (ZN A1-3)
- 13) MAX TWIST: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.38 (ZN C1-3).

ASSEMBLY

- 14) TO INSTALL D3502-1 SUPPORT: ABRABE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.02" TO 0.05" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

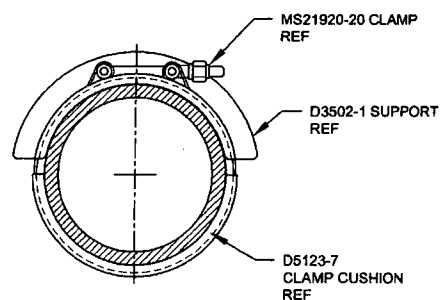
RELEASED

2015 MAR 18

47 ECN 15-547

A	NEW ISSUE	CP	15.01.21
REV.	DESCRIPTION	BY	DATE
DESIGN	40	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	40		
CHECKED	A.P.	DRAWING NO.	REV. A
MFG. APPR.		D350-748-243	SHEET 1 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI AFT)	NTS
DATE	15.01.21	COPYRIGHT © 2015 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

**D350-748-243
ASSEMBLY DETAIL**



SECTION A-A D4-2
SCALE 6X

INSTALL THIS SIDE ONLY, AFTER FINISH:
AETC-103Z INSERT
NAS1149C0363R WASHER
NAS1635-3-8 SCREW

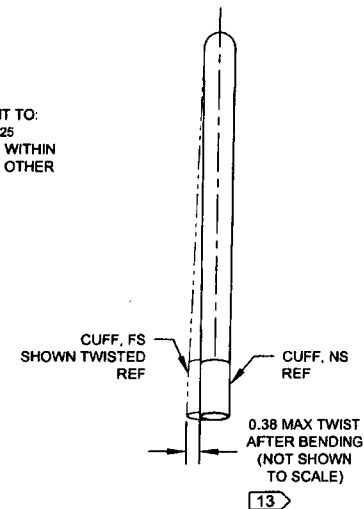
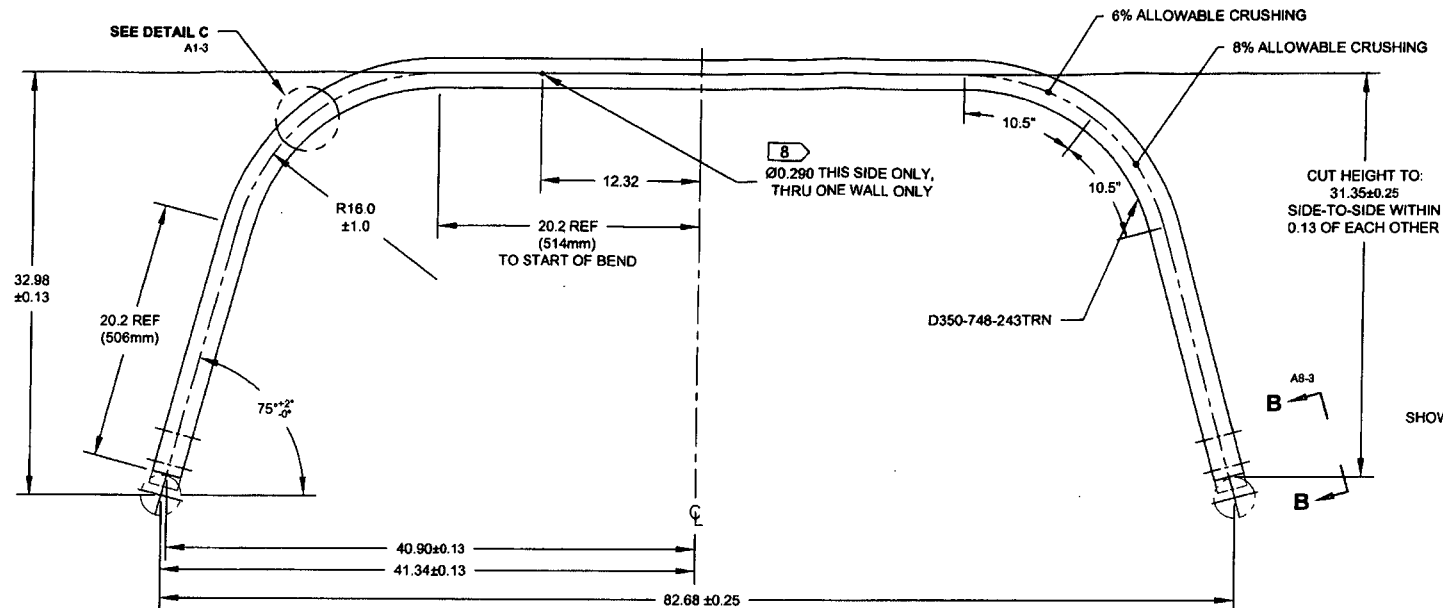
14 15
D3502-1 SUPPORT
MS21920-20 CLAMP (OR -21/-22)
D5123-7 RUBBER CUSHION
2 PL

D350-748-243
BENT TUBE

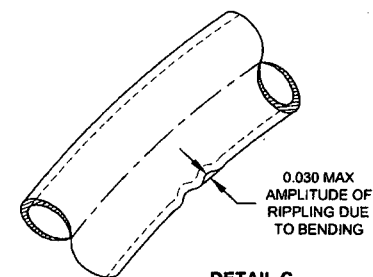
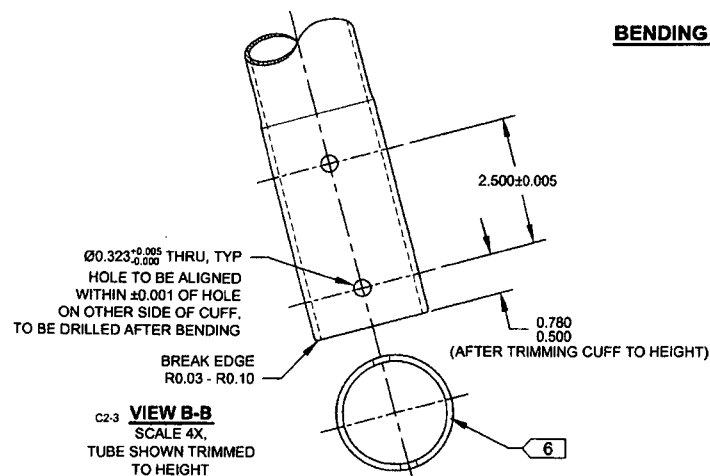
RELEASED

2015 MAR 18

DESIGN	9P	DART AEROSPACE LTD	
DRAWN	9P	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D350-748-243	SHEET 2 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE (AS 350/355 HI AFT)	NTS
DATE	15.01.21	COPYRIGHT © 2015 BY DART AEROSPACE LTD	
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**D350-748-243
BENDING AND DRILLING DETAIL 11**



DETAIL C 07-3
SCALE 4X
RIPPING EXAGGERATED

RELEASED
2015 MAR 18

DESIGN	9	DART AEROSPACE LTD	
DRAWN	9	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D350-748-243	SHEET 3 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE (AS 350/355 HI AFT)	NTS
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skyservice Work Order Traveler

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO25564	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: 29562
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

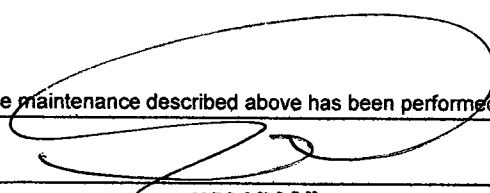
CARRY OUT NDT ON 9 CROSSTUBES AS PE PO29562

3 SSFWD CROSSTUBES , ITEM ID# D350-748-103 , WORK ORDER ID# 131170, 131171, 131173

6 SS AFT CROSSTUBES , ITEM ID# D350-748-203 , WORK ORDER ID# 131182, 131183, 131184, 131185, 131186, 131187

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-13 ***NO CRACK FOUND*** PEN. ZL-56, MPO13600, UV M-20141, CLEANER SKC-S MPO13923 , DEV. MPO11715						AUG 24 2015	 
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp 	Date: AUG 24 2015
Name: RAFAEL DELICIA		

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____

Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☒</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☒	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Date : _____		Step #: _____		QTY Effective : _____		MRB (QSI042) Approval DAS 12 15/8/27 9-89																																																																	
Description Work Order Deviation				Disposition																																																																			
To increase adhesion of prime/paint, use the following: Arcite 1320SS cleaner Arcite 230S Metabok. Tests show that Arcite provides superior adhesion vs normal procedure per QSI 005				Arcite 1320S Cleaner: 132520 BN Arcite 230S Metabok: 132474 BN				Completed By DAS 41 9-89 15-8-27 Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																															
Root Cause <table style="width:100%; border: none;"> <tr><td style="border: none;">Environment ☐</td><td style="border: none;">No Re-verification ☐</td></tr> <tr><td style="border: none;">Design ☐</td><td style="border: none;">Operator ☐</td></tr> <tr><td style="border: none;">Doc/Data ☐</td><td style="border: none;">Offset/Setup ☐</td></tr> <tr><td style="border: none;">Equip/Tooling ☐</td><td style="border: none;">Supplier ☐</td></tr> <tr><td style="border: none;">Handling/Pre ☐</td><td style="border: none;">Training ☐</td></tr> <tr><td style="border: none;">Material ☐</td><td style="border: none;">Use for Testing ☐</td></tr> <tr><td style="border: none;">Internal Transport ☐</td><td style="border: none;">Poor Information ☐</td></tr> <tr><td style="border: none;">Tribal Knowledge ☐</td><td style="border: none;">Rushing ☐</td></tr> <tr><td style="border: none;">LOA ☐</td><td style="border: none;">Product Improvement ☐</td></tr> <tr><td style="border: none;">Substation ☐</td><td style="border: none;">Process Improvement ☐</td></tr> <tr><td style="border: none;">Past Expiry Date ☐</td><td style="border: none;">Manufacturing Process ☐</td></tr> <tr><td style="border: none;">Misidentified ☐</td><td style="border: none;">Past Due ☐</td></tr> </table>		Environment ☐	No Re-verification ☐	Design ☐	Operator ☐	Doc/Data ☐	Offset/Setup ☐	Equip/Tooling ☐	Supplier ☐	Handling/Pre ☐	Training ☐	Material ☐	Use for Testing ☐	Internal Transport ☐	Poor Information ☐	Tribal Knowledge ☐	Rushing ☐	LOA ☐	Product Improvement ☐	Substation ☐	Process Improvement ☐	Past Expiry Date ☐	Manufacturing Process ☐	Misidentified ☐	Past Due ☐	FAULT CATEGORY <table style="width:100%; border: none;"> <tr> <td style="border: none;">Pressure/Forced ☐</td> <td style="border: none;">Temperature/Cure ☐</td> <td style="border: none;">Power Loss/Surge ☐</td> <td style="border: none;">Positioned Wrong ☐</td> </tr> <tr> <td style="border: none;">Bending ☐</td> <td style="border: none;">Set-up ☐</td> <td style="border: none;">Folio/Program ☐</td> <td style="border: none;">Outside Dimensions ☐</td> </tr> <tr> <td style="border: none;">Centre Not Concentric ☐</td> <td style="border: none;">BOM/Route ☐</td> <td style="border: none;">Grain ☐</td> <td style="border: none;">Over/Under tolerance ☐</td> </tr> <tr> <td style="border: none;">Cracks ☐</td> <td style="border: none;">Broken/Damage/Defect ☐</td> <td style="border: none;">Weld ☐</td> <td style="border: none;">Part Incorrect ☐</td> </tr> <tr> <td style="border: none;">Crimp/Kink/Ripple/Wave ☐</td> <td style="border: none;">Inspection Incomplete/Unqualified ☐</td> <td style="border: none;">Wrong Stock Pulled ☐</td> <td style="border: none;">Part Lost/Missing ☐</td> </tr> <tr> <td style="border: none;">Cuffs ☐</td> <td style="border: none;">Contamination ☐</td> <td style="border: none;">Out of Sequence ☐</td> <td style="border: none;">Part Moved ☐</td> </tr> <tr> <td style="border: none;">Crushing ☐</td> <td style="border: none;">Countersink ☐</td> <td style="border: none;">Off-set ☐</td> <td style="border: none;">Drawing ☐</td> </tr> <tr> <td style="border: none;">Heat Treat ☐</td> <td style="border: none;">Cut Too Short ☐</td> <td style="border: none;">Mislabeled ☐</td> <td style="border: none;">Finish ☐</td> </tr> <tr> <td style="border: none;">Wave/Twist in Tube ☐</td> <td style="border: none;">Instructions Incomplete/Unclear ☐</td> <td style="border: none;">Fit/Function ☐</td> <td style="border: none;">Misread ☐</td> </tr> <tr> <td style="border: none;">Marks/Chatter ☐</td> <td style="border: none;">Drill Holes ☐</td> <td style="border: none;">Misaligned/off center ☐</td> <td style="border: none;">Turning Sequence ☐</td> </tr> </table>						Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
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OTHER : _____																																																																							

Work Order ID 131184

Monday, March 30, 2015 9:10:56 AM

131184

Page 1

Item ID: D350-748-203

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: SS Aft Crosstube AS350 / AS355

Start Date: 3/30/2015 Start Qty: 1.00

1

Required Date: 3/30/2015 Req'd Qty: 1.00

1

Cust Item ID:

Reference:

Customer:

Approvals: Process Plan: MLJ

Date: 1503-30 Tooling:

Date:

Run Start ***NR1***

QC: Date: SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								

D350-748-243

A

100

Document Control

0.00

DAS

100

DOCUMENT CONTROL

DC

0

Memo

0.00

0-00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPPD350-748-201

CHG001

MLJ

SEP 21 2015

110

110

GNC Bend 2

BENDING MACHINE - CROSSTUBES

0.00

CNC Alpha 160 Bender

Memo

0.00

Bend tube as per Dwg D350-748-243 using CNC bender program D350A and Folio FT

*****UNDER BEND .225" PER SIDE*****

*****USE (4) DT9824 SHIM BLOC TO CHECK STRAIGHTNESS*****

MLJ

15-08-10

4.0 WEIGHT AND BALANCE

The following weight and balance information is for Dart crosstube installations only. This data should be similar to the existing installation. Differences from the parts removed are the responsibility of the installer.

DART CROSSTUBE	FWD/ AFT	WEIGHT	STA	MOMENT
D350-748-101 D350-748-103	Fwd	35.2 lb (16.0 kg)	106.3 in (2.70 m)	3742 lb-in (43.2 kg-m)
D350-748-201 D350-748-203	Aft	34.7 lb (15.7 kg)	162.4 in (4.12 m)	5635 lb-in (64.7 kg-m)

5.0 PARTS LIST

Qty -101	Qty -103	Qty -201	Qty -203	Part Number	Description
X				D350-748-101	CROSSTUBE INSTALLATION, AS 350/355 HIGH FWD
	X			D350-748-103	CROSSTUBE INSTALLATION, AS 350/355 HIGH FWD (SS)
		X		D350-748-201	CROSSTUBE INSTALLATION, AS 350/355 HIGH AFT
			X	D350-748-203	CROSSTUBE INSTALLATION, AS 350/355 HIGH AFT (SS)
1				D350-748-141	CROSSTUBE ASSEMBLY, AS 350/355 HIGH FWD
	1			D350-748-143	CROSSTUBE ASSEMBLY, AS 350/355 HIGH FWD (SS)
		1		D350-748-241	CROSSTUBE ASSEMBLY, AS 350/355 HIGH AFT
			1	D350-748-243	CROSSTUBE ASSEMBLY, AS 350/355 HIGH AFT (SS)
*2	*2	*2	*2	D3502-1	SUPPORT
*2	*2	*2	*2	D5123-7	CLAMP CUSHION
*1		*1		AELS-1032-225	INSERT
	*1		*1	AETC-1032	INSERT
*2	*2	*2	*2	MS21920-20	CLAMP (OR MS21920-21/-22)
*1		*1		MS27039-1-10	SCREW
	*1		*1	NAS1685-3-8	SCREW (OR MS51958-63)
*1		*1		NAS1149D0363J	WASHER (OR AN960JD10)
	*1		*1	NAS1149C0363R	WASHER (OR AN960C10)
4	4	4	4	D3500-1	SADDLE
16	16	16	16	D3501-1	BUSHING
16	16	16	16	AN4-6A	BOLT
8	8	8	8	AN4-41A	BOLT
4	4	4	4	AN5-32A	BOLT
32	32	32	32	NAS1149D0463J	WASHER (OR AN960JD416)
8	8	8	8	NAS1149D0563J	WASHER (OR AN960JD516)
24	24	24	24	MS21042L4	NUT (OR MS21042-4)
4	4	4	4	MS21042L5	NUT (OR MS21042-5)

* REFERENCE ONLY. PARTS ARE INCLUDED IN D350-748-141/-143/-241/-243 ASSEMBLIES ABOVE